

**SPAN-OF-CONTROL FOR BATTALION CHIEFS
FOR EFFECTIVE MANAGEMENT, DEVELOPMENT,
AND ADMINISTRATION OF PERSONNEL**

EXECUTIVE DEVELOPMENT

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ABSTRACT

The human resource in any fire department is the most valuable asset it has. Fire department battalion chiefs are key personnel with significant responsibility for the support, development and training of personnel under their command. In addition, the battalion chiefs provide a key link between the line personnel and fire administration.

The Bellevue Fire Department has experienced tremendous growth in on-duty resources and staffing under one 24 hour Operations Battalion Chief, which has become problematic. It is the authors belief that due to the excessive span of control, fire department Battalion Chiefs are unable to adequately assist employees to realize their full potential, which impacts daily operations and the employees they supervise.

The author attempts to lay a foundation that examines the benefits for increasing the department's daily battalion chief staffing. The problem was that the Bellevue Fire Department continues to have nine fire stations, three emergency medical services (EMS) stations, creating a very broad span-of-control for a single battalion chief; the department needs to be reorganized from one to two battalions. The purpose of this applied research project was to demonstrate the need, and develop a plan, to reorganize the Bellevue Fire Department into two battalions. The research questions were:

1. What assigned activities/responsibilities for Battalion Chiefs are considered critical but inadequately addressed due to limitations on the battalion chiefs time?
2. How will reorganization into two battalions address the limitations of the battalion chiefs time?

3. How are other fire departments in the immediate area and of similar size organized?

This research paper employed action research to identify issues precluding frequent contact, training and personnel development due to the time constraints caused by an excessive span-of-control. The literature review provided a compilation of information that outlined the significant responsibilities and issues to be considered when determining the level of battalion chief staffing. The author researched the battalion chief to station ratio of other fire departments of like size and found that as organizations increase in size, the number of stations battalion chiefs are responsible to oversee decreases.

Based on the research, it is recommended that the Bellevue Fire Department with nine fire stations and three EMS stations, be reorganized from one to two battalions. Doing so, will reduce an otherwise excessive span of control, yielding the benefits of improved firefighter safety, improve training opportunities, and enhance employee development.

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INTRODUCTION

The fire department of Bellevue, Washington, is a progressive municipal fire organization founded and organized in 1965. In the beginning, the City of Bellevue was primarily a bedroom community with a very modest commercial base. Today things are very different. Bellevue is a work destination point with high-rise office buildings, light commercial/industrial sections and a very substantial retail district.

The Department opened its doors on January 1, 1965 with one fire station, staffed by three firefighters and one battalion chief on duty 24 hours a day. In the first year of operation, the fire department answered 253 calls for service, with 18 of them being for emergency medical services (EMS).

Over the next decade two significant events were the catalyst for growth; Medic 1 and the adoption of a fire master plan which was preceded by a significant structure fire in a multi-family structure in 1978. With support from citizens and medical professionals, and public demand for high quality out-of-hospital emergency medical care, Bellevue started the first Medic 1 program outside the City of Seattle. The Bellevue program became the first city in the area (King County) to follow the ground breaking leadership of the City of Seattle.

The inception of Medic One had a dramatic effect on requests for emergency services in Bellevue. The organization grew quickly from a one station, one battalion chief fire department, to the nine fire station, three EMS station, single battalion, full service fire department it is today. The growth of the fire department was the result of careful and thoughtful planning. In 1979, the fire department and the City Council adopted a Fire Master Plan. The master plan was

one of the first such planning documents of its kind in the country. A dramatic fire occurred in 1978 and was the catalyst for the department's expansion. At the fire, it was evident that the department was severely understaffed and careful planning was in order to provide for quality fire protection services. The primary focus of the fire plan was for fire protection services, and was developed to design a fire department that could respond to fire and EMS calls within four to five minutes. The 1979 Fire Master Plan allowed policy makers to make a conscious decision about the level of service and the level of risk they were willing to take. The department's initial role in EMS was for basic life support (BLS) only. In 1972, the department improved the level of EMS care to include advanced life support (ALS); the level of care that it continues to provide today.

The problem is that the Bellevue Fire Department continues to have nine fire stations, three EMS stations, creating a very broad span-of-control for a single battalion chief; the department needs to be reorganized from one to two battalions. This situation is highly problematic if the Bellevue Fire Department is to maximize its potential. The purpose of this applied research project will be to demonstrate the need, and develop a plan, to implement the reorganization of the Bellevue Fire Department into two battalions. Action research methods were utilized to develop this report. This study consisted of a literary review of published documents from Executive Fire Officer candidates, multiple books from a variety of fire service and general government materials, and research that included telephone research of other fire departments, including interviews of fire department battalion chiefs to answer the following questions:

1. What assigned activities/responsibilities for battalion chiefs are considered critical

but inadequately address due to the limitations on the battalion chiefs time?

2. How will reorganization into two battalions address the limitations on the battalion chiefs time?
3. How are other fire departments in the immediate area and of similar size organized?

BACKGROUND AND SIGNIFICANCE

The primary reason for the existence of a city is to provide basic services which include fire protection. The provision of fire protection services reflects the responsibility of a city and there is a strong relationship between the general character of a community, which includes its economic vitality, and its fire protection and emergency medical services. City Council action allocates taxpayer dollars to provide essential physical resources and facilities (e.g., fire apparatus, emergency medical units, fire stations and equipment), but it is the human resources who are required to maximize the services available with the resources provided.

Organized in 1965, the Bellevue Fire Department provided fire protection and EMS services to an area approximately 21 square miles with a population of 20,000. This included Bellevue residents and to those of six adjacent communities. Services were provided from one staffed fire station housing one engine, one ladder truck, with three firefighters, and one battalion chief, and one volunteer fire station. In the first year of operation, the department responded to 253 alarms of which 18 were EMS related.

The Training Division was a key component in the inception of the Fire Department. Staffed with one battalion chief on a 40 hour work week, the Training Division worked with operations personnel on a *daily basis*.

In 1969 the City began to experience multiple annexations that required additional 24 hour staff. In 1972 the Training Division staff was increased to two members (one battalion chief and one fire lieutenant). The operations division (now called a bureau) was now comprised of three fire stations (three engine companies) and one battalion chief.

Over the next 20 years the City's demographics changed dramatically. The City was transformed from a suburban bedroom community to a urban employment and retail center with multiple high-rise buildings. The political climate and make-up of the City Council has always been characterized as conservative. Competition for budget dollars continues across all City departments and there is a reluctance to add full-time personnel.

The fire department was aggressive about securing contracts for service with a new city on its south border, and contracts with the county organization for ALS services have been added to the department responsibilities. The additions have resulted in a service area for fire protection and EMS of over 45 square miles and 130,000 people (301 square miles and 255,000 people for ALS). In 1998 there were 15,685 alarms. The on-duty battalion and training division uniformed staff has remained unchanged for over 20 years.

| Year | BC On-Duty | Training | Alarm Activity | Stations |
|------|------------|----------|----------------|----------|
| 1965 | 1 | 1 | 253 | 1 |
| 1969 | 1 | 1 | 953 | 3 |
| 1972 | 1 | 2 | 1,852 | 4 |
| 1977 | 1 | 2 | 3,755 | 6 |
| 1983 | 1 | 2 | 6,053 | 8 |
| 1990 | 1 | 2 | 10,437 | 9 |
| 1992 | 1 | 2 | 11,492 | 10 |
| 1997 | 1 | 2 | 14,985 | 12* |

* Fire Department staffs nine fire stations and paramedic facilities at Overlake

Hospital, in Issaquah, Washington and North Bend, Washington.

The above graph illustrates the growth the department has experienced since 1965. As illustrated, the demand for service, the increase in staff, responsibilities and the number of fire stations is an impediment to maximizing the employees potential for battalion chiefs in developing personnel under their command. The net effect is long distance supervision, infrequent battalion level training and increased stress to upper management (Deputy Chiefs). The Deputy Chiefs do not have enough staff chief officers to assist in the workload created by a large organization with a small administrative staff. Increasing the number of Battalion Chiefs would also assist the Deputy Chiefs in managing collateral responsibilities such as the hazardous materials response team, technical rescue and the youth explorer post.

There is a huge cost to the organization due to the small size of fire administration. Lack of organizational effectiveness can be described in lost opportunities. These lost opportunities can be measured in terms of “items left on the table”. Inadequate Battalion Chief staffing precludes innovation, increased training and effective research and development.

In March, 1998, the Bellevue Fire Department achieved the status of an accredited agency from the Commission on Fire Accreditation International. The Bellevue Fire Department was one of the first three departments accredited following alpha and beta test sites. At the time of accreditation, the department was the first on the west coast, and one of only eight fire departments in the world.

The fire department battalion chiefs assigned to the operations bureau have significant responsibility. As stated in the City Bellevue job description for battalion chiefs (*City of Bellevue*, 1984):

1. Direct and coordinate battalion staff in fire suppression, emergency medical and

- related disaster efforts.
- 2. Maintains discipline and morale and evaluates staff performance.
- 3. Plans and supervises the training of staff in emergency control; conducts simulated exercises; conducts safety inspections.
- 4. Takes command at fire scenes; controls and directs the physical environment surrounding an emergency scene.
- 5. Performs other administrative duties such as preparing special reports, planning for new equipment and apparatus, promoting public relations and keeping routine records.

The span-of-control for one battalion chief is challenged with eight engine companies, one light force (truck company), four ALS units, two (BLS) units and one Medical Services Officer (MSO; paramedic supervisor). In addition, there is an intrinsic need for “contact” between battalion chiefs and subordinate personnel. As a supervisor, the battalion chiefs have a duty to develop, coach and counsel employees whom they directly supervise.

The Bellevue Fire Department *Standard Operating Procedures*, Article 200, Section 2, Subsection 6.3.6 states, “Battalion Chiefs shall have administrative supervision of officers, employees, stations, companies and equipment as assigned by the Fire Chief”. Major work initiatives, change in policy and training can not happen quickly. Time, schedules, travel distances and assigned work significantly impact organizational effectiveness. A needs analysis for a tenth fire station is scheduled for 2004, which if approved, would be located in the Central Business District.

Washington Administrative Code 296-305-05501, Fire Training states:

- (1) All members who engage in emergency operations shall be trained commensurate with their duties and responsibilities. Training shall be as frequent as necessary to ensure all members can perform their assigned duties in a safe and competent manner but shall not be less than the frequencies specified in this standard. Minimum training shall be as specified in this part.

The battalion chief to company/station ration precludes regular training opportunities

with the platoon operations battalion chief.

In addition to routine training, fire battalion chiefs “shall have responsible supervision of the extinguishment of fires and saving of lives and property until relieved by a ranking officer” (*Bellevue Fire Department Standard Operating Procedures*, Article 100, Section 2, Subsection 6.3.2). With only one battalion chief on-duty during a 24 hour period, all aspects of emergency operations which include incident command, communication, strategy and tactics, deployment of and allocation of resources, and strategy and tactics reside with the on-duty battalion chief. As the primary incident commander the following *Washington Administrative Code* (WAC) 296-305-05001, *Emergency Fireground Operations - Structural* apply:

- (2) At an emergency incident, the incident commander shall be responsible for the overall safety of all members and all activities occurring at the scene.
- (3) All emergency incidents shall be managed by an incident commander shall be establish an organization with sufficient supervisory personnel to control the position and function of all members operating at the scene and to ensure all safety requirements are satisfied.
- (4) At an emergency incident, the incident commander shall have the responsibility to:
 - (a) Assume and confirm command and take an effective command position.
 - (b) Perform situation evaluation that includes risk management.
 - (c) Initiate, maintain, and control incident communication.
 - (d) Develop an overall strategy and attack plan and assign units to operations.
 - (e) Develop an action incident organization by managing resources, maintaining an effective space of control, and maintaining direct supervision over the entire incident by creating geographical and/or functional areas as appropriate for the scope and size of the incident.
 - (f) Review, evaluate, and revise the operational as required.
 - (g) Continue, transfer, and terminate command.

The addition of a second on-duty battalion chief (reorganizing from one to two battalions) represents a significant opportunity to improve organizational communications and effectiveness. A reduction in the span of control would provide additional on-scene command staff, increase

training opportunities, improved safety, and increased contact with supervisors and employees.

Maintaining only one on-duty battalion chief in the face of increased alarm activity and increased training requirements is an impediment to maximizing the battalion chiefs full potential to assist personnel under their command.

This research project is closely related to the following units in the Executive Development course; “Working as a Team”, “Research” and “Following and Leading”.

LITERATURE REVIEW

In most communities, public safety services (fire and police protection) represent the number one priority for funding. As the scope of services that fire departments provide changes, mission statements and the targets they represent become more broad. These changing roles and the complexity of issues require frequent interaction with employees for development and self-actualization. In assessing a need for change in the operations bureau of the Bellevue Fire Department, this study reviewed several sources.

“Public Safety is seen as the most important City Council goal followed by protecting the livability and vitality of the City’s neighborhoods.” (*Gilmore*. June, 1996) Approximately 85% to 90% of a typical fire department’s budget is for its human resources. Because of this tremendous commitment, effective management of personnel is critical.

It is the human resource in every fire department that determine the quality of service. “Responding to fires is not only the most important service to residents but also one with which they are most *satisfied*.” (*Gilmore*. June, 1996)

The battalion chiefs assigned to the operations bureau have a broad span-of-control and significant responsibility. Battalion Chiefs direct and coordinate battalion staff in fire suppression, emergency medical and related efforts, maintain discipline and morale, evaluate staff, plan and supervise the training of staff in emergency control, conduct simulated exercise, conduct safety inspections, take command at fire scenes, controls and directs the physical environment surrounding an emergency scene, and performs other administrative duties such as preparing special reports, planning for new equipment and apparatus, promoting public relations and keeping routine records. (*City of Bellevue*, 1984)

The difference between a successful innovation and an unsuccessful attempt to innovate quite often lies in the capabilities (or lack of them) of management personnel within a particular fire department. “A subordinate/supervisor relationship is necessary to function effectively during emergency operations. It is also important during daily operations among stations and teams of personnel.” (*ICMA*, p. 68) No change can be initiated without the participation of key personnel in the organization. In most fire departments, and especially in Bellevue, because of the unique relationship between labor and administration, the battalion chiefs represent these key personnel.

Relationships in the fire service are critical. According to Thomas J. Tallon, Battalion Chief, Salt Lake City Fire Department, states, “Leadership always has and always will be based upon interpersonal trust and mutual respect. It is a one-to-one, face-to-face, heart-to-heart relationship. (Tallon, 1996) Should the span of control continue to increase, the effectiveness of the middle management is diminished. “As municipal governments and fire departments transition to flattened hierarchies, they are realizing that flatter is not necessarily better”.

(Reynolds, 1993)

Battalion Chiefs are key employees for developing personnel under their command. Negative impacts result when long distant supervision is required, which can occur when the span of control between a battalion chief and assigned battalion personnel is excessive. “The span-of-control should also be limited to the number of individuals with whom the officer should and can have frequent contact, balanced against the need for broad communications in the organizations.” (Reynolds, 1993)

An essential component to managing the human resources in any fire department is also the assurance of a well-trained workforce. The emergency environment encountered by fire service personnel is becoming more complex and utilizes more “high-tech” equipment than the previous generation. “As organizations grow larger there tends to be more need for specialization, with a corresponding need for new levels of supervision and management”. (Coleman & Granito. *Managing Fire Services*, p. 57)

In addition to formal training by company officers and battalion chiefs, employees are encouraged to pursue educational opportunities both on and off the job.

It is important that you encourage employees to learn more about the work they do, that you train them in new ideas and new methods, and that you help to keep with new developments and to understand that new developments can change the nature of the job or do away with a job entirely. Beyond that it is important for you and for them to understand that change is normal - especially today - and may be a very good thing.
(ICMA, p. 19)

The Bellevue Fire Department has had two uniformed employees assigned to the Training Division since 1972. At the time there were 65 personnel. Since then, incrementally, staff has

been added (one). In 1998, there are 192 personnel and the uniformed training staff remains the same.

WAC 296-305, *Safety Standards for Firefighters*, 296-305-05501, Fire Training requires:

- (1) All members who engage in emergency operations shall be trained commensurate with their duties and responsibilities. Training shall be as frequent as necessary to ensure all members can perform their assigned duties in a safe and competent manner but shall not be less than the frequencies specified in this standard....

As local funding for fire and emergency services diminishes, middle management can become an easy target. Ronny J. Coleman in *Managing Fire Services* states the following:

While it remains the chief executive's responsibility to motivate top management, the assistant deputy or battalion chiefs should, in turn, influence middle management personnel by providing them with an environment in which they can achieve greater influence, both upward and downward, and in which they can become key implementors and communicators.

Middle management personnel, in turn, are responsible for increasing opportunities for nonmanagerial employees to participate in the change process. Nonmanagerial employees should be fully advised to the details of the contemplated change, the reasons for the change, the expected alterations in the work program, and the advantages to be gained throughout the organization. (p. 412)

Department Standard Operating Procedures guide employees and provide the framework for discipline, mutual respect, work practices and general conduct. State statute outlines training and response requirements, and administration is responsible to see that line personnel receive the necessary support to be successful.

According to the International City Managers Association (ICMA), the entire fire control organization exists for the purpose of controlling and extinguishing fire, providing rescue services and performing other related duties to prevent fire. All command and administrative personnel exist for the main purpose of supporting field operations through directing, coordinating, and evaluating the effective use of the fire company. A lack of understanding this relationship often leads to ineffective effort, decrease in morale, and a general reluctance to participate in a meaningful and professional manner. (Reynolds, 1993)

Times are changing and so are the people entering the fire service. Often referred to as “twenty somethings”. Diverse backgrounds, diverse values and differing attitudes require maximum attention to the work environment.

Today's workers also differ from their counterparts of a generation ago in that they are likely to be better educated, more independent, more assertive, and more inquisitive- and to expect more of their society. They want to participate, be important, and be involved. In other words, they expect and demand “a piece of the action.” All of this means that supervisors need to give employees the opportunity to be instinctive, to have a sense of belonging. (*ICMA*, p. 16)

Employees represent approximately 85% to 90% of most fire department budgets. The management of this commitment is essential. In day to day operation the battalion chief represent a key link to the employees. *Effective Supervisory Practice*, Second Edition. ICMA states:

Today's effective supervisor recognize the reality of the new values and attitudes and then tries to find ways of effectively dealing with all employees - ways that are acceptable to *them*. This means building good relations with employees and strengthening their willingness to work harder and better. (p. 23)

In the United States, the Incident Command System (ICS) is routinely used. The battalion chiefs assigned to a 24 hour platoon assignment have the responsibility to train and enforce the proper use of ICS. The ICS system provides for efficient and effective deployment of resources and has improved firefighter safety. “The safety of firefighter personnel represents the major reason for utilizing the ICS and establishing divisions and groups.” (*Bellevue Fire Department*, 1998) In August, 1997, Fire Chief magazine published an article that reviewed the reorganization of the Edmonton, Alberta Emergency Services. In *Why Should Managers Haul the Mail*, the article describes how reorganization helped their fire department improve emergency operations and training due to increased contact with the battalion chiefs.

ICS was used more properly, more routinely and more consistently than it ever had been in the past. This was a result of ongoing training, coaching and positive reinforcement provided by the battalions chiefs. (Williams, 1997)

In the late 1979's, wildfire devastated parts of California. From that event, ICS was developed. ICS calls for resources to be managed in a way that does not overwhelm supervisors and managers and improves firefighter safety due to its intrinsic accountability for on-scene resources (span-of-control). The Bellevue Fire Department's lesson plan on incident command states, "The number of division/groups that can be effectively managed by the IC varies. Normal span of control is 3-7, with 5 being the optimum." (p. 35)

Managing Fire Services, written by Ronny J. Coleman and John A. Granito addressed many fire services issues. Relevant to this research project is its review of span of control.

Span of Control: In addition to having the unit of command, supervisors need to be assigned a group that is of manageable size. That is, each supervisor must have a reasonable "span of control". A person's span of control is normally established on the basis of the nature and difficulty of work, the skills and abilities of the persons being supervised, and the experience and ability of the supervisor. Normally, under non-emergency conditions most supervisors are expected to be able to supervise seven to twelve persons. Under emergency conditions, most experts recommend limiting the supervised group to three to five members. (page 57)

In 1998, Los Angeles City Fire Captain Mike Dupee tragically lost his life battling a major emergency structure fire. The Los Angeles City Fire Department courageously published a comprehensive significant incident report (*Fatality Structure Fire, Incident Number 84*) which explored all aspects of the incident. The report covered items such as incident command, strategy, tactics, deployment of resources, and discipline. Adequate battalion and command post staffing is critical during major events.

There was significant problems with incident management and control. The IC was overwhelmed with incoming radio messages, fireground activity, and did not receive

several critical radio messages. (Factors of Entrapment and Delayed Rescue)

New Federal *OSHA* (Occupational Safety and Health Administration) now require four members to assemble on the fireground for initial attack. *NFPA* (National Fire Protection Association) also contains language that requires staffing of four prior to interior firefighting. The battalion chief represents an additional resource to assist in meeting this safety requirement.

NFPA 1500 A-6-4.4

The assembling of four members for the initial fire attack can be accomplished in many ways. The fire department should determine the manner in which they plan to assemble members in their response plan. The four members assembled for initial firefighting operations can include an officer, a chief officer, or any combination of members arriving separately at the incident. (p. 39)

Many fire departments across the country staff engine companies with three firefighters. Given the new *OSHA* regulations, fire service leaders must try innovative ways to meet the intent of the new standard. Jack Bennett who authored “*The 40 hour Battalion Chief May Be Hazardous to Your Health*” states, “Chief Bennett believes the fire service must utilize the Battalion Chief as a staffing member of the engine company relating to *NFPA 1500* and *OSHA* rules regarding firefighter safety and staffing.” (*American Fire Journal*. August, 1993)

These research sources support the fact that fire service must carefully evaluate the allocation of battalion chief resources. As key employees in the organization, the battalion chiefs have substantial responsibility for the accurate communications, development, training and safety of personnel which is compromised by an excessive span-of-control.

PROCEDURES

Definition of Terms

| | |
|-------|--------------------------------------------|
| ALS- | Advanced Life Support |
| BLS- | Basic Life Support |
| EMS- | Emergency Medical Services |
| ICMA- | International City Management Association |
| ICS- | Incident Command System |
| LRC- | Learning Resource Center |
| NFPA- | National Fire Protection Association |
| OSHA- | Occupational Safety and Health Association |
| WAC- | Washington Administrative Code |

Research Methodology

The desired outcome of this research project was to solve a problem in the Bellevue Fire Department. Battalion Chiefs assigned to a 24-hour platoon operations, manage a 55-person platoon staffing nine fire stations, three EMS stations and paramedic supervisor (MSO; Medical Services Officer). The span-of-control is excessive due to the intrinsic needs of employees to communicate, training requirements, increases in emergency response, personnel development, and the time necessary to accomplish all that is expected. Inadequate staffing affects organizational culture and professional development which were units of teaching in “Executive Development” within the curriculum of the National Fire Academy’s Executive Fire Officer Program and an issue identified by the Bellevue Fire Department.

Action research methods were used to develop this research project. Extensive

literature research was done in approximately 25 references on various supervisory, management and fire department and government practices. Research materials were obtained utilizing resources contained in the National Emergency Training Center, L.R.C., periodicals, text, literature, field research documents and published materials from the authors home organization.

The interview process to obtain information about battalion chief responsibilities and the *ICMA* comparative cities study was accomplished by face-to-face contact and by telephone. The battalion chiefs interviewed all had more than 17 years experience and either have or are currently working in the operations battalion chief position in the Bellevue Fire Department.

A major limitation in this research project was the lack of specific subject material on battalion chief to company ratios and/or battalion chief to personnel ratios. In addition, six months to complete this project was not sufficient to conduct an in-depth and exhaustive research.

RESULTS

Answer to Research Questions

The findings concerning the results of this research project are found in Appendix A in the form of a new organizational chart for the Bellevue Fire Department.

Research Question 1: What assigned activities/responsibilities for battalion chiefs are considered critical but inadequately addressed due to limitations on the battalion chiefs time?

The four battalion chiefs who have or are currently working the Battalion 1 office (24-hour operations battalion chief) were questioned by e-mail, phone and face-to-face in order to determine what items were considered critical and were not adequately addressed due to the limitations on the battalion chiefs time. The critical and non-critical items were limited to 10

each for this research paper.

The fire battalion chiefs considered the following items to be critical: Daily, Dorney, Faehnrich, Remington (January, 1998)

1. Incident Command and control at emergencies
2. Supervision of shift officers (coaching and counseling)
3. Training assigned companies
4. Implementing change
5. Policy enforcement
6. Monitoring emergency activity
7. Management of platoon staffing
8. Continuing Education for battalion chiefs
9. Coordination and evaluation of staff and platoon activities
10. Policy development

Research indicated that there is not “any choice” to not do critical functions. What discovered however, is the acknowledgment that do to the span-of-control, the critical tasks can not be done at a “superior level”. In addition to battalion duties, there is not capacity for significant collateral duties. When collateral duties and projects are assigned, the time it takes to do the additional work only exacerbates the situation created by an excessive span-of-control.

The non-critical tasks and responsibilities that were identified by the four battalion chiefs include the following: Daily et al. (1998)

1. Calling overtime for unscheduled absences
2. Authorizing compensated leave
3. Authorizing time trades
4. Assisting company officers in developing policy recommendations and work practices
5. Duty assignment schedule
6. Participation in committees
7. Outside agency interaction
8. Assisting in budget development
9. Interaction with other City departments
10. Records review

The above tasks and responsibilities translate into only enough time to meet quarterly training objectives, evaluate company officers performance annually based on limited information, and coordination of a myriad of departmental platoon activities. Because there is limited time to perform all the “critical” tasks, the lack of time reduces the effectiveness of the battalion chiefs for developing assigned personnel to their full potential. In a profession that demands perfection, demands teamwork, and needs public support for its survival, continued erosion in the span-of-control is a precipice to an event that may negatively impact a firefighter or citizen.

Research Question 2: How will reorganization into two battalions address the limitations on the battalion chiefs time?

The current job description for battalion chief outline several major responsibilities. (*City of Bellevue*, 1984) These include:

1. Direct and coordinate battalion chief staff in fire suppression, emergency medical and related disaster efforts.
2. Maintain discipline and evaluates staff performance.
3. Plans and supervises the training of staff in emergency control; conducts safety inspections.
4. Takes command at fire scenes; controls and directs the physical environment surrounding an emergency scene.
5. Performs other administrative duties such as preparing special reports, planning for new equipment and apparatus, promoting public relations and keeping routine records.

Research indicates that there are several advantages to the organization should the Bellevue Fire Department reorganize from one to two battalions. These include improved organizational communications, enhanced training, and improved firefighter safety.

As highlighted in *Effective Supervisory Practices*, a significant benefit to reorganizing

from one to two battalions is improved organizational communications.

A key to developing relationships is to first improve communications, which in turn improves a level of understanding and appreciation; and second, provide an atmosphere that allows members to work together in achieving common objectives. The concept of “participative management” and the initiation of team building efforts have helped many organizations provide an environment conducive to the development of relationships that lead to cooperation and teamwork. (*ICMA*, p. 57)

A key role for platoon battalion chiefs is to monitor and maintain discipline. The physical location, number of personnel and stations make frequent contact a significant challenge and regular or frequent contact not a reality. Christopher Reynolds, *Growth: A Parallax View* stated, “The span-of-control should be limited to the number with whom the officer should and can have frequent contact, balanced against the need for broad communications in the organization.”

The addition of a second on-duty battalion chief would reduce the span-of-control by 50%. Improving the span-of-control would enhance organizational communications. In interviews with other Bellevue Fire battalion chiefs, “just having the time to spend with companies and the time to get everything we are charged to do is a significant challenge.” Remington (personal communication, January 12, 1998) The possible addition of a tenth fire station in the near future will only compound the problem.

The research indicated that fire service organizations are continued to be challenged by a changing workforce. The workforce is more educated, more independent and not afraid to ask questions (e.g., Why?). Increasing battalion staffing would increase the contact time with assigned officers and personnel.

Reorganization would increase regular training opportunities with platoon battalion chiefs. Currently, platoon battalion chiefs are required to train with each company, each quarter

(four times a year). There are other training opportunities that occur, but not at the frequency which is desired and necessary to ensure employees are fully realizing their potential. Rotating work schedules, days off, and details to cover unscheduled absences, demand the opportunity for increased training with platoon battalion chiefs and platoon personnel.

Platoon battalion chiefs are responsible for training and evaluation of staff. *WAC 296-3-5-05501*, Fire Training states:

(1) All members who engage in emergency operations shall be trained commensurate with their duties and responsibilities. Training shall be as frequent as necessary to ensure all members can perform their assigned duties in a safe and competent manner but shall not be less than the frequencies specified in this standard. Minimum training shall be as specified in this part.

The Training Division has not received a proportional increase in staff as the department has grown. New Federal *OSHA* safety regulations will increase their current workload. The reorganization of the fire department from one to two battalions will increase the opportunities for evaluation of assigned companies and personnel.

The increased battalion staff and exposure to supervisory staff will provide additional training opportunities in areas that have not been stress to date. These include trench rescue, weapons of mass destruction and other industry changes.

The addition of a second on-duty battalion chief will improve firefighter safety. With fire company staffing at three members, and the travel distance the current single battalion designed provides, quicker response times will allow company officers to be rejoined with their fire company sooner. Allowing company officers to work with their companies versus filling the Incident Commander role, will improve company unity, accountability and workplace safety.

A quick arriving chief officer will assist in increasing the on-scene staff. Newly adopted

OSHA regulations require four firefighters on-scene prior to interior firefighting. *NFPA 1500*, A-6-4.4 mirrors the *OSHA* regulation. Using the battalion chief as the fourth on-scene member is an innovative remedy to the new regulation. "...as the incident escalates, the incident management system should be utilized to maintain an effective span of control ratio 3-to-7. Good sector control = good safety control." (*NFPA 1500*, A-6-1.5 {e})

The assembly of four members for the initial fire attack can be accomplished in many ways. The fire department should determine the manner in which they plan to assemble members in their response plan. The four members assembled for initial firefighting operations can include an officer, a chief officer, or any combination of members.

(p. 39)

Additional battalion staffing will improve on-scene radio communications and span-of-control, while providing additional battalion staffing should the organization face busy periods of simultaneous alarms. In 1998 a Los Angeles City Fire Captain tragically lost his life. A contributing factor in the after action report identified excessive radio messages to the command post when only one battalion chief was on-scene without an adjutant or other command post assistance. (*Significant Incident Report, Incident Number 84*)

Research Question 3: How are other fire departments of similar size and in the immediate area organized?

A telephone interview was conducted to the fire departments in the immediate area. The fire departments in the immediate area are organized in a similar fashion and tend to reflect local character. Chart #1 shows that all fire departments have at least one battalion chief or shift commander on duty, for fire departments staffing two or more fire stations. One fire department staffing 40 stations, has six operation battalion chiefs and one safety battalion on-duty 24 hours a day (Seattle, WA).

Chart #1

| Department | Staffed Stations | Battalion Chief/ Shift Commanders on-duty |
|-----------------------------|------------------|-------------------------------------------|
| Seattle, WA | 40 | 7 |
| Bellevue, WA | *12 | 1 |
| Eastside Fire & Rescue | 8 | 1 |
| Kirkland, WA | 5 | 1 |
| Redmond, WA | 6 | 1 |
| Bothell, WA | 4 | 1 |
| Shoreline (Fire District 4) | 2 | 1 |

* Bellevue Fire Department staffs one paramedic facility at Overlake Hospital and two paramedic facilities in east King County.

Seattle and Bellevue have a distinct central business district with high-rise office buildings and increased population density during the daytime hours. The fire departments in the immediate area experience EMS call volumes that equal approximately 75% of their emergency call activity.

The author also researched fire departments that are of similar size. The author chose to use cities currently being evaluated by the City of Bellevue in an *ICMA* comparative cities study. Chart #2 provides samples that are municipal fire organizations with a plus or minus 50% of population served.

Chart #2

| City | Staffed Stations | Battalion Chiefs/ Shift Commanders on- duty | Population | Training Division Staff |
|-------------------------|---------------------------|------------------------------------------------------|------------------------------------|----------------------------|
| Lubbock, TX | 13 | 2 | 194,000 | 4 |
| San Bernidino, CA | 12 | 2 | 183,000 | 1 |
| Little Rock, AK | 21 | 4 | 176,000 | 5 |
| Reno, NV | 10 | 2 | 156,000 | 4 |
| BELLEVUE, WA | 12* City : 10** | 1* City: 1** | 255,000* City: 130,000** | 2 |
| Fullerton, CA | 6 | 1 | 123,000 | 1 |
| Santa Rosa, CA | 9 | 1 | 122,000 | 1 |
| Gresham, OR | 6 | 1 | 114,000 | 1 |
| Santa Clara, CA | 10 | 1 | 98,000 | 10 |
| San Mateo, CA | 6 | 1 | 91,000 | 2 |

* Indicates population served under ALS contracts

** Indicates the facilities within the City limits and fire contract area

The research indicates that as fire departments grow in size, the battalion chief to station ratio decreases. It appears with few exceptions, that five to six stations per battalion chief is the norm. While not included in the graph, travel distance and the battalion chief schedule impacts the level of on-duty chief officer staffing (e.g., Santa Clara; battalion chiefs work a 40 hour week on 24-hour call back and a Captain manages the stations overnight; and Fullerton, CA. with a 22 square mile area of coverage). The decision on how to allocate on-duty battalion staffing can include geographic considerations, travel distances between stations, emergency call load and

organizational preference.

DISCUSSION

The Bellevue Fire Department has experienced tremendous growth over a 20 year period. When the organization was established in 1965, there was one fire station with three members and one battalion chief on-duty. When the organization began, there was significant focus on training and the development of its personnel, and the span-of-control was excessive. Over the years the Bellevue Fire Department has gained tremendous community support for their efforts and the community expects that the department will continue to deliver high quality services. In a recent survey, “Responding to fires is not only the most important service to residents but also the one with which they are most *satisfied*.” (Gilmore, 1996)

In 1999, the department has nine fire stations, three EMS stations, with still only one battalion chief on-duty. The battalion chiefs remain the key member on the platoon and are a critical link with fire administration for communicating goals and objectives, prescribing work practices, soliciting feedback on performance and development of personnel under their command. A tenth fire station is under discussion and a study is planned in 2004. In addition, the training division still has only two uniformed staff (the same as when the department had three fire stations in 1972).

The human resource in any fire department represents a commitment of 85% to 90% of a typical fire department budget. This makes the personnel resource not only the most expensive, but the most important resource the department has, and the level of supervision and management should be proportional for effectiveness.

Communications in any organization is critical. The fire department operations chiefs are

key individuals in facilitating communications in the organization. Managers, even in private industry and public sector organizations who have access to their supervisors and employees on a daily basis, suffer from inadequate organizational communications. Fire service organizations working a three or four platoon schedule, in multiple satellite locations, have a communications problem exponential in scope.

“Battalion chiefs are responsible for managing, training and evaluation of fire resources assigned to their battalion.” (Bellevue Fire Department, *Standard Operating Procedures*) In *Growth: A Parallax View*, the author wrote:

The entire fire control organization exists for the purpose of controlling and extinguishing fire, providing rescue services and performing other related duties to prevent fire. All command and administrative personnel exist for the main purpose of supporting field operations through directing, coordinating, and evaluating the effective use of the fire company. A lack of understanding of this relationship often leads to ineffective effort, decrease in morale, and a general reluctance to participate in a meaningful and professional manner. (Reynolds, 1993)

Fire Department battalion chiefs are responsible to “plan and supervise the training of staff in emergency control; conduct(s) simulated exercises; conduct safety inspections.” (*City of Bellevue*, 1984) With an excessive span-of-control, a training division with inadequate staffing and new *OSHA* mandates months away from implementation, the responsibility for training is daunting. The organization would benefit tremendously reorganizing from one to two battalions due to the reduced span-of-control for fire department battalion chiefs, which would increase the amount of training time and opportunities for personnel.

The *Safety Standards for Firefighters*, Chapter 296-305, *WAC* covers training of emergency personnel and states:

(1) All members who engage in emergency operations shall be trained commensurate

with their duties and responsibilities. Training shall be as frequent as necessary to ensure all members can perform their assigned duties in a safe and competent manner but shall not be less than the frequencies specified in this standard. Minimum training shall be as specified in this part.

Battalion chiefs are key members in managing change. Because safety is such an important component of day to day operations, motivating employees to further their knowledge in a tremendous responsibility, especially in an occupation that is changing all the time.

It is important that you encourage employees to learn more about the work they do, that you train them in new ideas and new methods, and that you help them keep up with new developments and to understand that new developments can change the nature of a job or do away with it entirely. Beyond that it is important for you and for them to understand that change is normal-especially-today-and may be a very good thing. (*ICMA*. p. 19)

As the City has grown, the battalion chief response area has grown to approximately 45 square miles. “The safety of firefighting personnel represents a major reason for utilizing and establishing Divisions/Groups.” (Bellevue Fire Department, *ICS Lesson Plan*) The battalion chief plays a significant role in establishing work areas at major emergencies. More often than not, engine or truck companies are first on-scene and initiate ICS.

Effective command and control must be maintained from the beginning to the end of operations, particularly if command is transferred. Any lapse in the continuity of command and the transfer of information increases the risk to firefighters. (*OSHA*, A-6-1.5)

A growing workload has negatively impacted the operations battalion chiefs. They are in a sense “maxed out”. The excessive span-of-control for battalion chiefs requires that work be done more in a “reactive mode” rather than a “planning mode”. *Managing Fire Services*, by Ronny J. Coleman & John A. Granito states:

Span of Control: In addition to having the unity of command, supervisors need to be assigned a group that is of manageable size. That is, each supervisor must have a

reasonable “span of control”. A person’s span of control is normally established on the basis of the nature and difficulty of work, the skills and abilities of the persons being supervised, and the experience of the supervisor. Normally, under non-emergency conditions most supervisors are expected to be able to supervise seven to twelve persons. Under emergency conditions, most experts recommend limiting the supervised group to three to five members. (p. 57)

Part of the growing workload is the assignment of projects and collateral duties. If each battalion chief was responsible for a smaller number of fire stations or companies, there may be capacity to assist upper management (Deputy Chiefs) with other major collateral duties. Examples may include the Hazardous Materials Team, Technical Rescue, Dispatch Center Liaison and the Youth Explorer Post.

“Leadership always has and always will be based upon interpersonal and mutual respect. It is a one-to-one, face-to-face, heart-to-heart relationship.” (Tallon, 1996) Face-to-face contact is critical. Long distance supervision over a long period of time can become superficial and ineffective, but is often required due to the workload, travel distance and time constraints.

The *ICMA* wrote, “In a large organization workers often feel like small cogs on a large wheel and they need a large dose of recognition and responsibility to help them feel important.” (*Effective Supervisory Practices*) At the heart of every organization are the personnel that make it up. “A subordinate/supervisor relationship is necessary to function effectively during emergency operations. It is also important during daily operations among stations and teams of personnel.” (Coleman & Granito, *Managing Fire Services*)

Excessive span-of-control impacts the battalion chiefs ability to monitor and develop assigned employees. The role of management is not only to oversee the delivery of essential services, but to also prepare individuals to oversee and manage the department in the future.

While it remains the chief executives responsibility to motivate top management, the assistant deputy or battalion chiefs should, in turn, influence middle management personnel by providing them with an environment in which they can achieve great influence, both upward and downward, and in which they can become key implementors and communicators.

Middle management personnel, in turn, are responsible for increasing opportunities for nonmanagerial employees to participate in the change process. Nonmanagerial employees should be fully advised as to the details of the contemplated change, the reasons for the change, the expected alterations in the work program, and the advantages to be gained throughout the organization. (Coleman & Granito, *Managing Fire Services*)

The reorganization of the Bellevue Fire Department from one to two battalions would result in improved firefighter safety. The second battalion chief would provide additional on-scene command staff, back-up battalion staff during high activity periods and simultaneous multi-company incidents, and a quicker response to emergencies, which can augment on-scene staffing and incident command.

In 1998, a Los Angeles City fire captain was killed while battling a structure fire. During the initial stages, the first arriving battalion chief was overwhelmed with critical radio traffic. (*Fatality Structure Fire, Incident Number 84*) The addition of a second battalion chief in the Bellevue Fire Department would help to reduce the chances of this occurring. In addition to improving command, the second battalion chief would reduce the reliance on scarce engine company personnel for command post functions.

All but three engine companies in the City of Bellevue are staffed with three members. *NFPA 1500* now requires four firefighters on-scene prior to interior firefighting. The battalion chief, while not ideal, can represent one of the four on-scene members when the need arises.

The assembling of four members for the initial fire attack can be accomplished in many ways. The fire department should determine the manner in which they plan to assemble their response plan. The four members assembled for initial firefighting operations can

include an officer, a chief officer, or any combination of members arriving separately at the incident. (NFPA 1500, A-6-4.4)

The Incident Command System represents the single most important factor to the safety of firefighters and managing on-scene fire resources. A reorganization in the Edmonton, Alberta Emergency Services Department, which increased the amount of time battalion chiefs spent with companies, has yielded positive results. In *Why Should Managers Haul the Mail*, by B.E. Williams, Ph.D. he wrote:

ICS was used more properly, more routinely and more consistently than it had been in the past. This was a result of ongoing training, coaching and positive reinforcement provided by the battalion chiefs.

The Bellevue Fire Department battalion chief to station ratio is excessive when compared to most organizations in the immediate area. Most battalion chiefs oversee the resources assigned to six or seven stations. In a review of cities with populations of 91,000 to 194,000, which are cities identified in a ICMA comparative cities study with the City of Bellevue, five to seven stations for each chief is the norm. It was also discovered that as the size of the organization increased, the ratio of stations to battalion chief decreased. The research indicates that the Bellevue Fire Department with resources assigned to 12 facilities warrants careful review so that battalion chiefs can realize and develop the full potential of the employees under their command.

The research has revealed that a single battalion chief with the responsibility to oversee resources in nine fire stations, and EMS resources in three other facilities is excessive. As the key individual in managing the human resource for implementing change, development of personnel, training and the critical link between upper management and line personnel, 12 facilities exceeds a reasonable span-of-control and results in the department losing opportunities to explore and

implement additional service opportunities.

The number of resources under the command of one battalion chief is at a point where performance is less than “superior”, than if the span-of-control was six to one, due to the volume of work associated with the personnel. In a profession that is responsible for protecting human life and the community, that demands perfection and requires public confidence and support to do so, adequate battalion staffing is a basic need.

RECOMMENDATIONS

The Bellevue Fire Department has entered a time period when the community expects high quality emergency services from its professional firefighters. The human resource, which accounts for about 85% to 90% of the fire department budget, and which delivers the service at the street level, deserves to be managed in an effective way.

It is evident that adding staff goes against the grain of today's political climate (“more with less”), and certainly the one in Bellevue. However, as emergency calls increase, federal mandates promulgate, and the workforce changes, the commitment of resources to “support the resource” will pay dividends.

This research paper has identified key areas of responsibilities that need attention. When a fire department with one battalion chief, has nine fire stations and three EMS stations, the performance is less than superior. The responsibilities for communications, training, development and oversight is excessive.

With these facts in mind it is recommended that the following reorganization be completed:

1. Reorganize the Bellevue Fire Department from one to two battalions. The responsible supervision of paramedic staff remains unchanged (EMS Division), but the chain of command for operational issues will be through new Battalion 2.

Battalion 1: Battalion 1 will be responsible for the resources assigned Fire Station 1, Fire Station 3, Fire Station 5 and Fire Station 6. Medic 1, which resides in the new Battalion 1 would continue to report to the MSO, which is housed at Fire Station 2. This would maintain the current reporting structure of all paramedic personnel with the MSO.

The allocation of companies to Battalion 1 was based on population, density of multi-family and high-rise office buildings, staff and call volumes associated with the stations as compared to Battalion 2. In addition, Fire Station 6 houses the hazardous materials unit. Should Fire Station 10 be opened in the future, it would be assigned to the 1st battalion and Fire Station 3 would be moved to 2nd battalion.

The response boundary for Battalion 1 will be the currently authorized first-in districts of Fire Station 1, Fire Station 3, Fire Station 5, Fire Station 6 and Fire Station 7.

Battalion 2: The new Battalion 2 would be responsible for the resources assigned to Fire Station 2, Fire Station 4, Fire Station 7, Fire Station 8, Fire Station 9 and the paramedic quarters through the MSO (Medic 1 at Overlake Hospital, Medic 3 at North Bend, WA. and Medic 14 in Issaquah, WA.). Should the MSO be relocated to Overlake Hospital, the paramedics would be moved to the 1st battalion.

The allocation of resources was based call volumes, staff and the concentration of multi-family and single family residences. Fire Station 4's first-in district does contain significant retail, commercial and several high-rise buildings. At this time, Station 7 (Lightforce 7) provides the technical rescue support for the entire department.

The response boundary for the new Battalion 2 would be the currently authorized first-in districts of Fire Station 2, Fire Station 4, Fire Station 8 and Fire Station 9. Battalion 2 would be housed at Fire Station 9 until the remodel at Fire Station 2 is completed in 2001.

Runcard Assignments: The current runcard assignments that allocate resources would remain unchanged. On all full assignments, both battalion chiefs would be notified, but only the first-in chief would be required to respond depending on the nature of the call.

2. Increase the number of Battalion Chiefs

The addition of a new battalion will necessitate the hiring of three new battalion chiefs. What is now a span-of-control of one chief to twelve stations would be reduced.

3. Results/Evaluation

As with any change, on-going evaluation for effectiveness is required. It is evident by this research paper that a single battalion model for twelve stations is excessive for proper oversight, development and training of personnel. However, the capacity of a two battalion model for collateral duties should be evaluated and considered. Currently the two deputy fire chiefs have an excessive amount of work to do, and little or no option for delegation for major work programs.

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BELLEVUE FIRE DEPARTMENT

